LPD 17 TECHNICAL MANUALS AND SHIPBOARD INTEGRATED DATA ENVIRONMENT

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Overview

- Review of Technical Manual Program
- Review of Training Program
- Product Integration
- Shipboard Data Environment

Technical Manual Program

- Delivery of maximum electronic documentation to support “Paperless Ship Initiatives”
- Standup of Technical Manual Focus Group
  - Government
    - NAWCTSD
    - NSWCCD Phila
    - NSWCPHD
    - NAVSEA SUPSHIP NOLA
  - Alliance
    - Northrop Grumman Ship Systems Avondale Operations
    - Raytheon
    - Intergraph Corp
- Product Development
  - Technical Manual Integration Plan (TMIP)
  - TM Style Guide Development excluding Chap. 4 (Eagle Integration)
  - TM ETM Master CONOPS
  - Concurrent Engineering Supportability Analysis (CESA)

Technical Manual Program

- Established TM Baseline of 1383 LPD17 Manuals
  - 599 Contractor developed Manuals
    - 495 Class 1 ETMs
    - 62 Class 2 ETMs
    - 7 Class 3 IETMs
    - 34 Class 4 IETMs
    - 1 Class 5 IETM
  - 784 Government Legacy Manuals
    - 70% Paper product
    - 30% electronic delivery

New Development Technical Manuals

- ETM/IETM tool selection, testing, and validation (19 Vendors/Tools)
  - Class 4 Tool selection completed August 1998
    - Raytheon Advanced Integrated Maintenance Support System (AIMSS) Ver 4.x IETM Authoring Tool
  - Class 2 Tool selection completed September 1998
    - Adobe Framemaker + SGML Authoring Tool
  - ETM/IETM Development Support Tools
    - Adobe Illustrator - Graphics for IETMs
    - Adobe Photoshop - Photo/Image editing for IETMs
    - Adobe Premiere - Multimedia/video production for IETM
    - Adobe Acrobat - Convert legacy documents to PDF
    - Arbortext E3 - Repository Tool
    - Arbortext Editor - Framemaker SGML Convertor

Legacy Technical Manuals

- Completed multiple PARM ILS Checklist Reviews
- Established Teaming Efforts with NSWC-PHD, NSWC-Crane, NSWCCD Phila, SUPSHIP New Orleans, and TMMAs
  - Identified Team Structure, Roles, and Responsibilities
- Government TM Identification and Delivery Processes and Flowchart from PARMs
  - Validated GF TM Database against PARM ILS Checklists
    - Schedule "A" (FMRs and A-Mods)
    - Validation against TDMIS
    - Validation against CDMD-OA
    - Validation against GDAPL
    - Continuos update of GF TM Database
  - Delivery paper, electronic and ATIS extractions
  - Alliance has responsibility to Scan legacy data to pdf format when paper product delivered

Technical Manual Testing Processes

- TMIP is contractual deliverable defining development processes.
- CONOPs defines operating environment.
- ETM/IETM Style Guide defines development environment.
- Validation, verification plans developed for acceptance of TMs
- Verification of TM environment (tools, source data, build procedures)
- Identified CESA data elements and output requirements for TM
- Establishing project teams for participation in technical manual verifications

Technical Manual Display Technology

- Standard IT21 Workstations in all work centers
  - Connected to Shipboard Integrated Product Data Environment (IPDE) Library
- Offline display capabilities for catastrophic failure and remote maintenance actions
  - Outfitting ship with 50 lap top computers
  - CD library in each work center
  - Researching hands free/wearable displays
    - Carnegie Mellon University
- ATIS System installed as backup

Total Ship Training Program

Instructor Preparation Center

- Authoring Systems
- IDPE Access
- IETM Use in Authoring
- Exercise Generation
- Modeling & Simulation
- Courseware Mgmt.

LPD 17 Class
LPD 18
USMC Systems

Embedded Training Systems (ETS)

- Engineering Control
  - Machinery Control
  - Damage Control
  - Condition Assessment
- Ship Control
- BFTT with Afloat Training Exercise and Managing System (ATEAMS)

Deployed Forces Trainers / Training

- Deployable Learning Resource Center
- Indoor Simulated Marksmanship Trainer
- Closed Loop Artillery Simulation System
- Precision Gunnery Training System
- Javelin Basic Skills Trainer
- Combat Vehicle Appended Trainer
- USMC Courseware

Advanced Electronic Classroom

- Instructor's Control Tools
- Video Tele-Training
- Distributive Learning
- ETM/IETMs for Training
- Instructor-Lead Interactive Multimedia (IMI)

Interactive Multimedia Instruction

FAM OPS, Maint.

- Familiarization
- Combat
- Electrical
- Comms
- Navigation
- Nav/Ship/Eng
- Degaussing
- Control Measures

Total Ship Training System (TSTS)

Additional Trainer Spaces/ Capabilities

- Chapel/Training Room
- Mission Brief Room
- Tele-Maintenance
- Training Spaces Hotel Services

Training Mgmt System

- System Admin Control
- Conduct Control
- Review Control
- Training Records Admin
- Electronic Training Jackets
- Training Scheduler

Integrated Team Training Systems

- Problem Controller
- Exercise Generators
- BFTT Integration
- Instructor Tools
- Start / Stop / Pause
- ETS Integration

Learning Resource Center

- ETM/IETM Reference
- 24-Hour Access
- Distributive Learning
- Ship-Wide Access
- Self-Paced Interactive Multimedia(IMI)

Medical Training

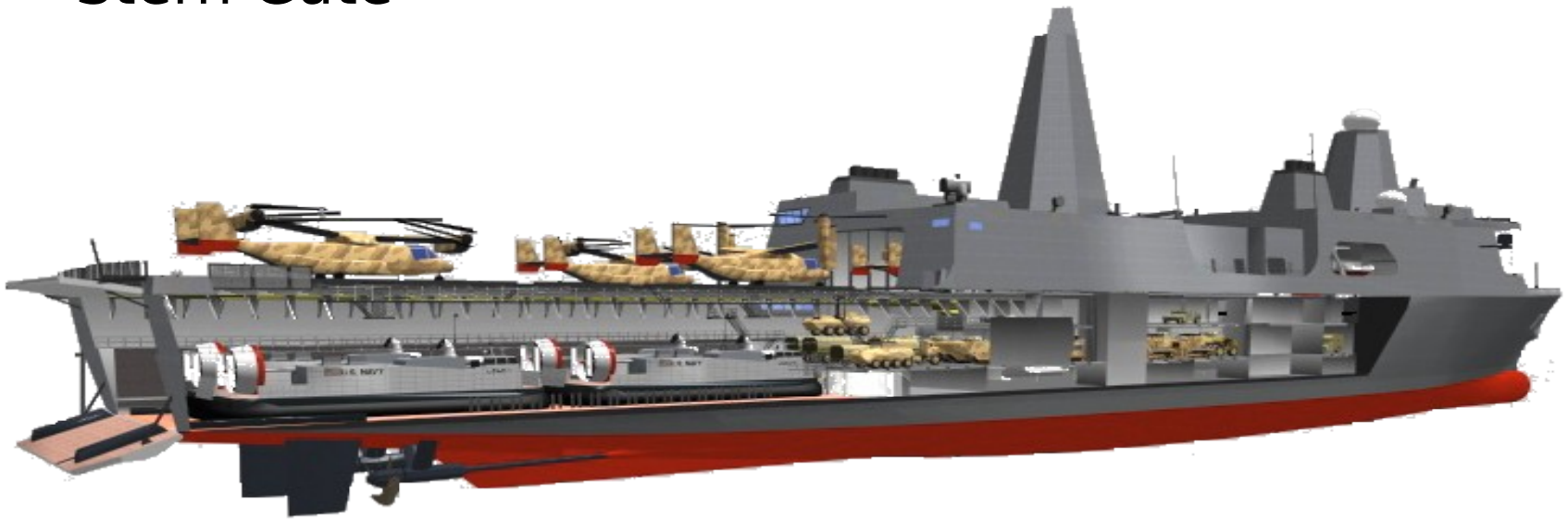
- Stretcher Mannequin
- Tele-Medicine
- Medical Courseware

Contractor Provided Training

- Familiarization Training
- Operations and Maintenance
- Original Equipment Manufacturer (OEM) Training
  - Engineering Control Console
  - Ship Control Console

LPD 17 Developed Training

- 94 Seat hours of Familiarization Training (PQS 200 Level)
- 150 hours of Shipboard Familiarization Training
- 403 Seat Hours of Operations and Maintenance training covering systems from Anchor Windlass to Stern Gate



Technical Manual and Training Integration

- Coordinated Integration processes for TM and Training Development:
  - Developed Integration Group Charter
  - Developed Integration Plan Tech Manuals and Training
  - Selected tools for development in graphics area
  - Developed schedule of concurrent development

LPD 17 and NAVSEA 04 Combined Initiatives

- ADCS TM Conversions (TM Technology Advances for SGML Tagging)
- Improved Graphical User Interface (GUI) for data environment
- Data environment interoperability with ERP

LPD 17 Shipboard IPDE Goals and Objectives

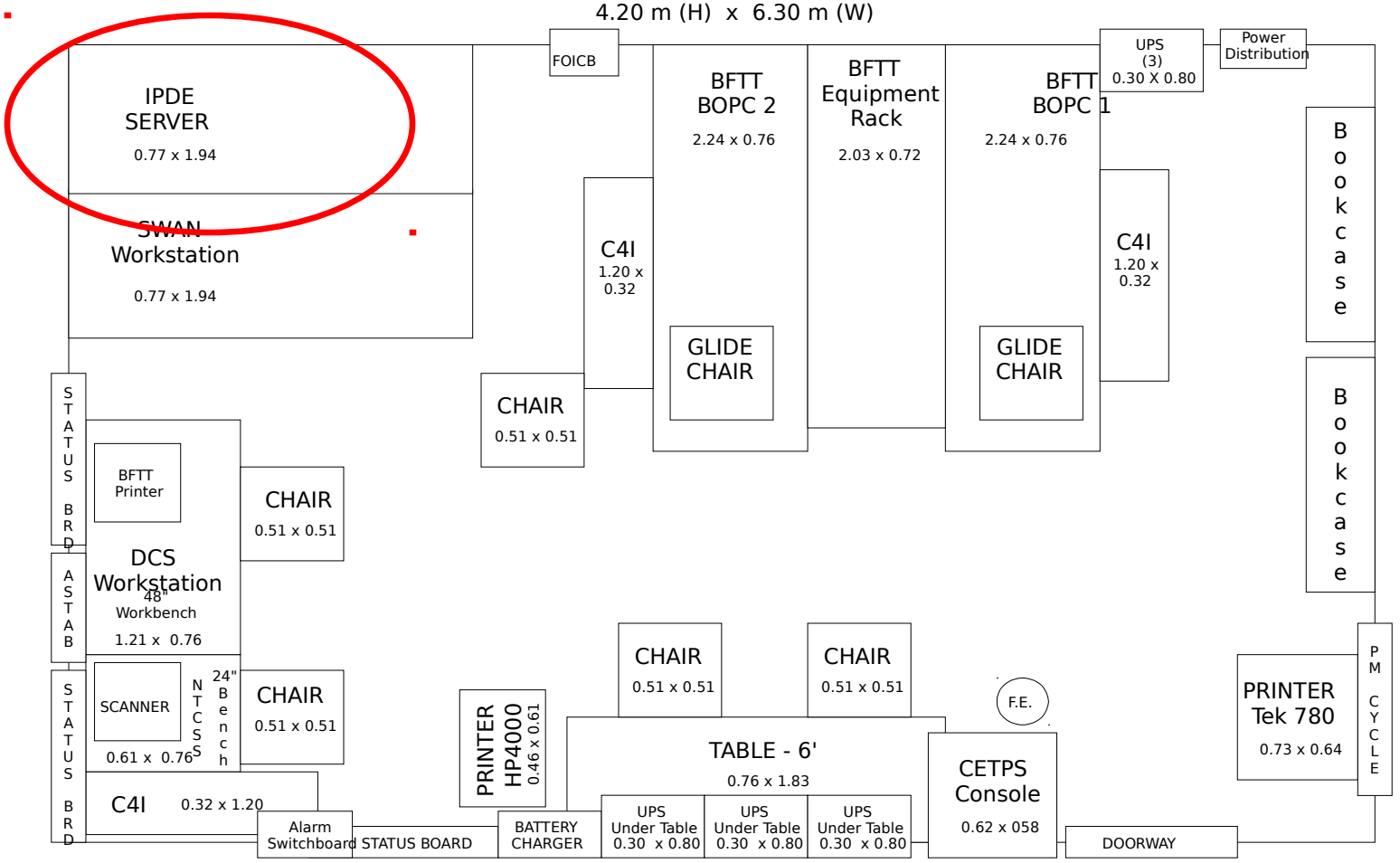
- **Provide the Warfighter:**
  - **Storage, Access and View of Product Data Model (PDM)**
    - **ILS data**
    - **Engineering Support data (PTS, design & test data, 3D models, etc.)**
  - **Storage, Access and View of Configuration/Support Products**
    - **ETMs, IETMs, MCR's, MIP's, etc**
    - **Host/Interface Operating Sequencing Systems (OSSs)**
    - **TSTS, Computer Based Training (CBT), etc**

LPD 17 Shipboard IPDE Arrangement

Combat System Maintenance Center (CSMC)

Proposed Layout Change 6/15 due to IPDE Server / MAW

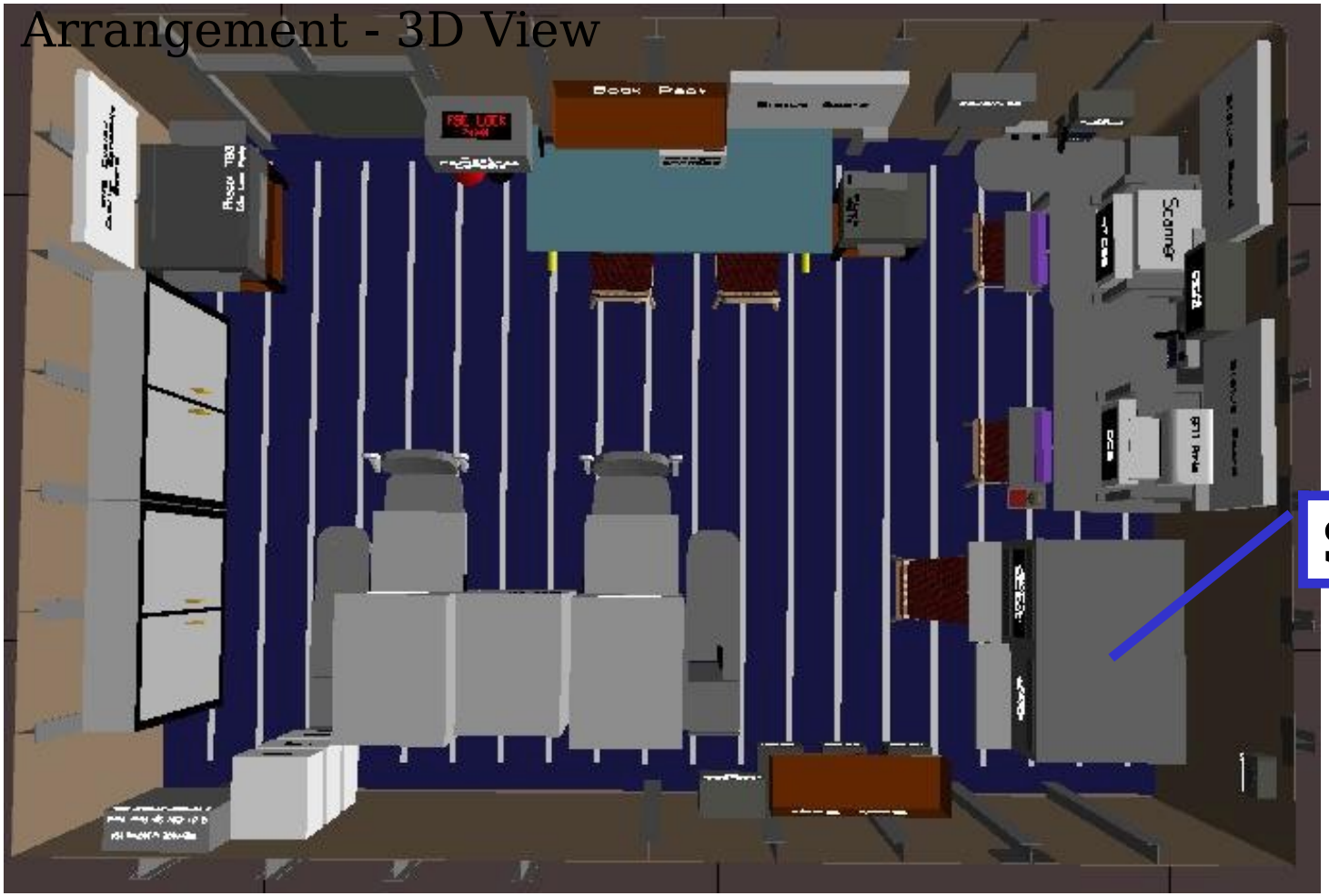
4.20 m (H) x 6.30 m (W)



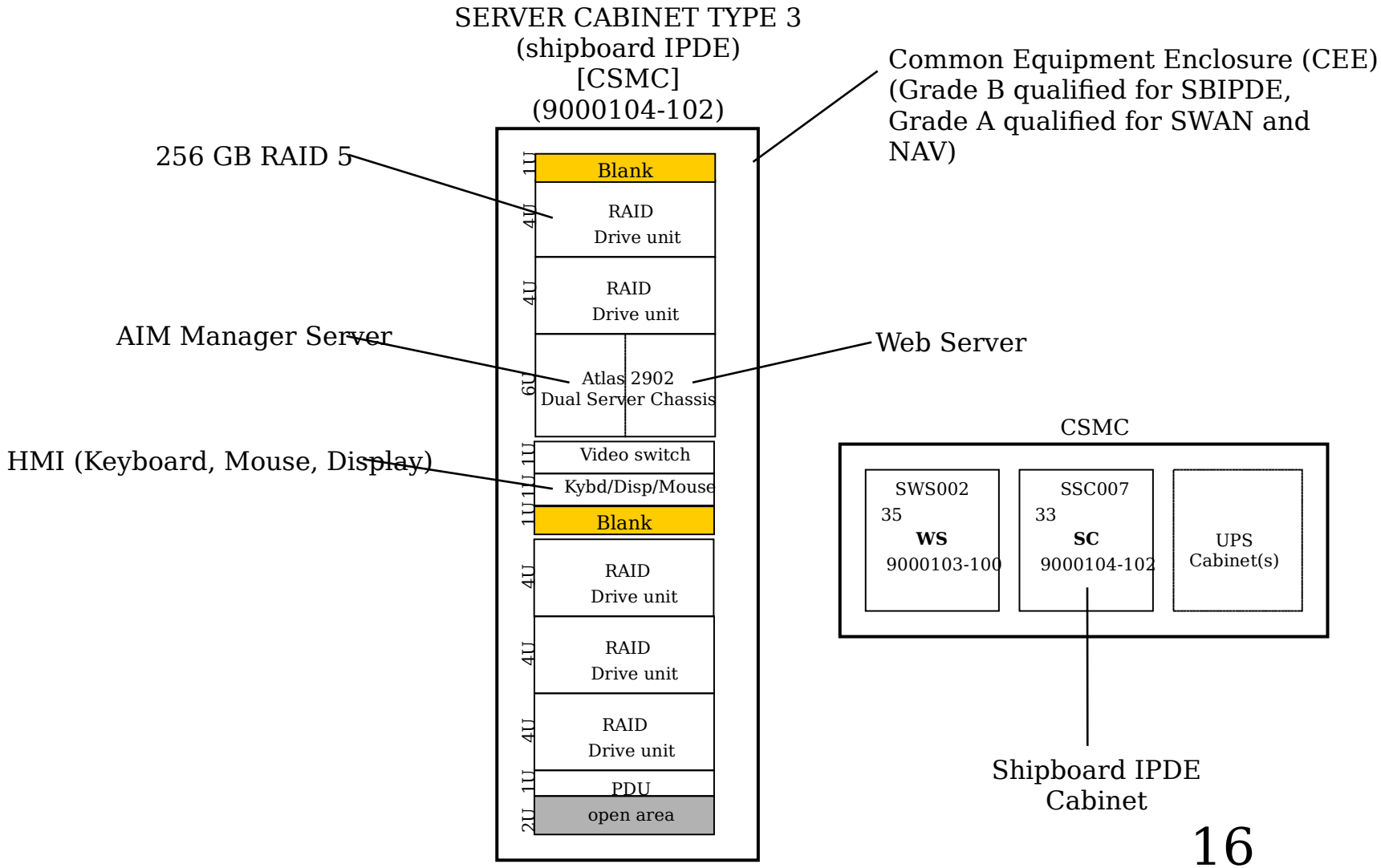
Note: Items Overhanging the Room Boundary Indicate Bulkhead Mounting

LPD 17 Shipboard IPDE Arrangement

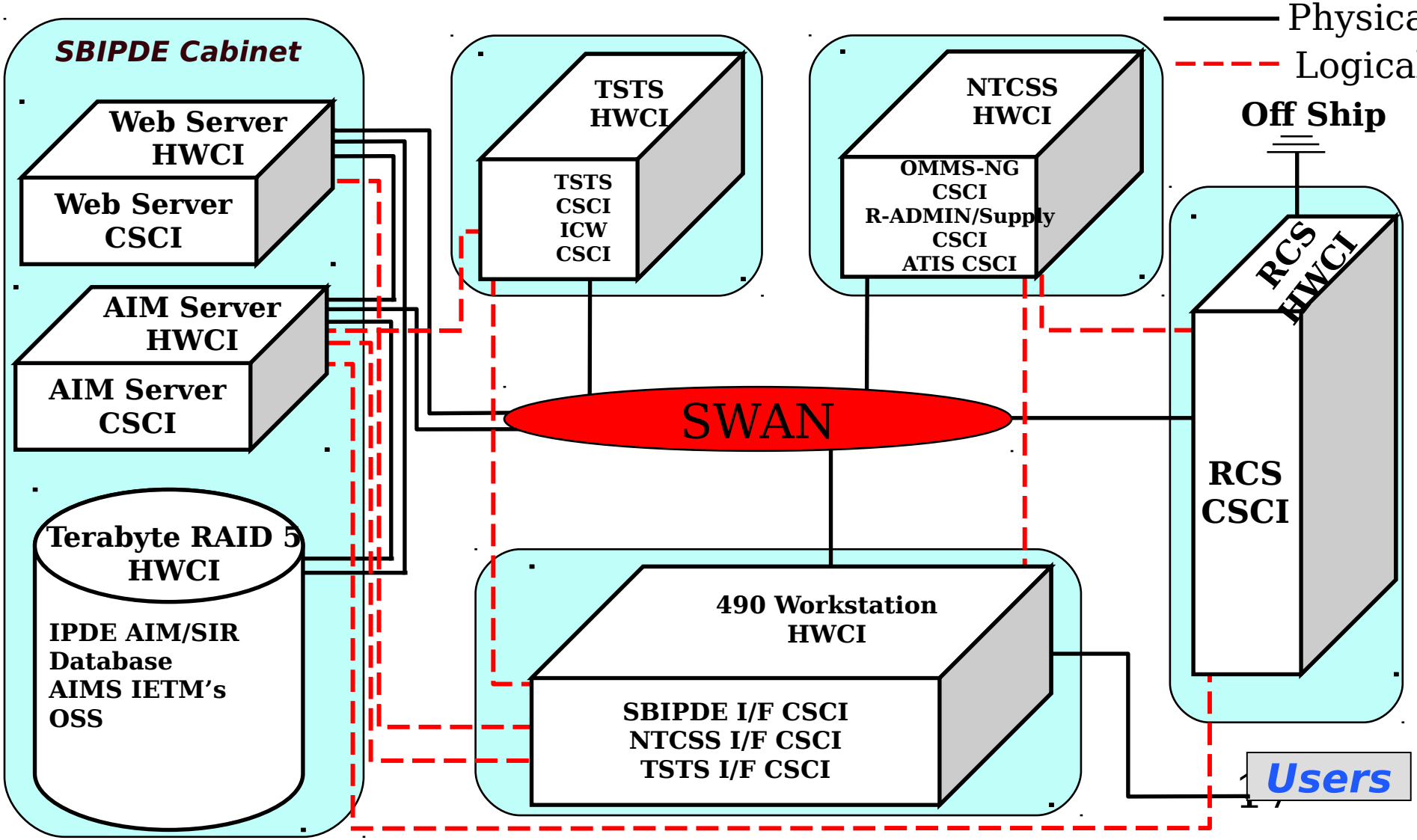
- Combat System Maintenance Center (CSMC) Arrangement - 3D View



LPD 17 Shipboard IPDE Hardware



LPD 17 Shipboard IPDE Architecture



NAVSEA
NAVAL SEA SYSTEMS COMMAND

BACK-UP SLIDES